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The influence of anthropogenic factors on organic matter content changes in chosen beach ecosystems

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ABSTRACT

Sandy sediments coming from two beaches being under the various anthropopressure were analyzed. The first beach was situated in Ustka, while the other one on the terrain of The Słowiński National Park. The general content of organic matter (OM), proteins, lipids, carbohydrates, chlorophyll *a*, and organic carbon were determined. The content of a biopolymeric organic carbon, values of a food index, and a coefficient of aging of the OM were estimated. Research was conducted with intervals for three months. It was established that human activity impacts on the concentration of analytes in the ecosystem of a seaside beaches. Their higher concentration was observed on the beach under more intensive anthropopressure. The results of the analysis of variance proved that the content of chemical parameters depends on the economic and tourist activity, the season of the year, and the impact of sea water. The stations situated at the central part of the beach are characterized by larger concentration of proteins, lipids, and carbohydrates rather than those that those who are not under the direct impact of the sea. The concentration of carbohydrates were characterized by the highest percentage contribution, while proteins by the lowest. Uncharacterized fraction of the organic carbon was higher in Ustka, while the food index in Czołpino. This suggests anthropogenic origin of the OM on the beach in Ustka and natural origin in Czołpino. At the sediments, there were comparable coefficients of the ageing of the OM.

Keywords: Sediments; Beach; Organic matter; Proteins; Lipids, Carbohydrates; Chlorophyll *a*

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